NIEHS Strategic Plan 2000

In keeping with the NIEHS philosophy that it is better to prevent disease than to treat it and that controlling environmental exposures is one of the best disease-prevention strategies, the NIEHS Strategic Plan 2000, released in March 2000, sets forth a framework of goals in nine areas that represent the institute's plan for furthering the field of the environmental health sciences over the next five years. These goals reflect the institute's mission to define how environmental exposures affect health, how individuals differ in their susceptibility to exposures, and how susceptibilities can change over time.

The plan covers a five-year period and itemizes both ongoing research initiatives as well as areas for which the NIEHS hopes to develop new initiatives. Many of the projects are collaborations with other organizations, as noted throughout the document.

The plan is available on the Strategic Plan 2000 Web site at http://www.niehs.nih.gov/external/plan2000/home.htm.

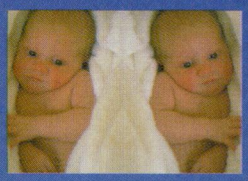
Goal 1—Provide a sound, rational scientific foundation to support public environmental health policy in the areas of:

- Children's environmental health
- Women's health
- Health disparities among different groups
- Asthma
- Parkinson disease and other neurodegenerative disorders
- Autoimmune diseases
- Herbal medicine
- Exposure assessment of the levels of important environmental toxicants or their metabolites among the general U.S. population
- Validation and regulatory acceptance of novel test methods
- Complex mixtures of environmental agents
- The molecular basis for environmentally induced diseases

Goal 2—Find new ways to provide timely, relevant environmental health data that can be extrapolated to the human condition through:

- High throughput technologies such as transgenic animal models, which allow quicker evaluation of chemical effects
- Computational biology, which uses mathematical models to study how environmental agents alter critical biological systems and cause disease
- Surrogate markers of safety, which would speed the pharmaceutical evaluation process by detecting adverse drug effects earlier in the drug development process
- Mouse Genomics Centers, where scientists will develop or refine mouse models of environmentally relevant human diseases, provide a comprehensive analysis of mouse model phenotypes and genotypes, and validate model usefulness for a variety of investigations

Goal 3—Identify the environmental component of human diseases by strengthening existing databases and registries and creating new ones that track and monitor exposures and diseases, including:

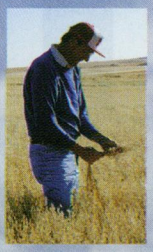


- A National Twin Registry, which would allow scientists to study the relative importance of genetic and environmental factors in major disease conditions
- Birth registries to assist in long-term epidemiologic studies that follow a child through the mother's pregnancy and into the later years of the child's life

Goal 4—Study and define factors for individual susceptibility to environmental exposures including:

- Variants (polymorphisms) of environmental disease susceptibility genes in the U.S. population, identified through the Environmental Genome Project and studied using animal models of disease susceptibility
- Gender-related differences in susceptibility
- The role of nutrition

Goal 5—Define the environmental and genetic components of many human diseases by establishing long-term, prospective studies, including:



- A study of cleft palate among Norwegian children and maternal environmental exposures
- The Agricultural Health Study, which examines how agricultural exposures affect cancer risk in farmers and their families
- A study of breast cancer among 50,000 sisters of women who have the disease

Goal 6—Ensure that the NIEHS and its research remains responsive to community needs and to newly emerging environmental health problems through:

- National Town Meetings, regional public forums for local residents to share their environmental health concerns with the NIEHS director and his staff
- Community Outreach and Education Programs at institute-supported centers across the country
- The Center for Evaluation of Risks to Human Reproduction, a forum for the expert evaluation of current literature on the reproductive and developmental effects of compounds
- A Phototoxicity Center to study cosmetic chemicals and additives, sunblock additives, tanning enhancers, skin colorants, and tattoo inks

Goal 7—Ensure a well-trained, diverse workforce in the environmental health sciences through:

- Expanded physician and nurse training in the environmental health sciences
- Minority training and support of minority-based institutions to develop a cadre of scientists with special ties to and understanding of communities at greater risk of exposure to adverse environmental agents
- Identification of crucial career transition points and development of programs to help talented scientists navigate them

Goal 8—Enhance the understanding of the environmental health sciences and their importance to human health through:

- Communication with the scientific community
- Communication with the general public
- Communication with growing Spanish-speaking and minority communities
- Communication of basic environmental science to young students

Goal 9—Ensure responsible stewardship of the NIEHS research enterprise through:

- Program evaluation by external groups
- Updated systems and tools for more efficient, responsible property management
- Health and safety reviews to ensure employee health, safety, and environmental compliance